

EH Resident Competency 1.23

Competency 1.23 EH Residents shall demonstrate a familiarity level knowledge of the safety hazards associated with hand and portable tools.

1. Supporting Knowledge and Skills

- a. Describe the general requirements for safe operation of hand and portable tools.
- b. Describe the purpose of the following types of protection associated with hand and portable tools:
 - Constant pressure switch
 - Grounding
 - Personal protective equipment
 - Procedural/administrative controls
 - Shutoff device

2. Self-Study Activities (corresponding to the intent of the above competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
OSHA	http://www.osha-slc.gov/	OSHA documents and search engine
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read the summary.

Review 29 CFR 1926, Subpart I.

Review DOE/ID-10600, *Electrical Safety Guidelines*, Section 2.0.

EXERCISE 1.23-A In your own words, describe at least five general requirements for safe operation of hand and portable tools.

EH Resident Competency 1.23

EXERCISE 1.23-B State the purpose for each of the following types of protection associated with hand and portable power tools:

- Constant pressure switch
- Grounding
- Personal protective equipment
- Procedural/administrative controls
- Shutoff device

3. Summary

Title 29 CFR 1926, Subpart I, covers a broad spectrum of tools as well as a variety of safety measures. It is, therefore, not possible to cover all pieces or even types of equipment or their safety features in this self-study guide. The purpose of this guide, therefore, is to relate some general safety considerations applicable to the majority of hand and portable tools.

General Safety Requirements

Title 29 CFR 1926, Subpart I, covers various types of hazards and safety standards. A list of specific safety requirements could be lengthy and not very useful; rather, the following list (taken from DOE/ID-10600, *Electrical Safety Guidelines*, Section 2.0), provides some general requirements.

- Determine the work content and the sequence in which it should be accomplished.
- Identify the safety procedures that shall be followed.
- Ensure that the tools and instruments are in good working order and have up-to-date calibration as required.
- Identify which tools are required and ensure that all workers know how to use them.
- Identify protective equipment required to perform the job safely.
- Allow only qualified individuals to operate tools and equipment.
- Select and post safety signs, symbols, or accident prevention tags to warn and protect employees where hazards are likely to endanger lives.
- Use barricades in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas where they might be exposed to uninsulated energized conductors or circuit parts. Do not use metal barricades where they are likely to cause an electrical contact hazard.
- Use manual signaling and alerting to warn and protect employees when signs and barricades do not provide sufficient warning and protection from hazards.
- Limit the work area to authorized individuals who are familiar with the work. Do not allow unauthorized individuals into the work area.
- Ensure that all individuals who are involved in the work are notified of any changes in the work conditions.
- Report unsafe conditions that develop during the work process immediately to the person in charge or the immediate supervisor.

EH Resident Competency 1.23

4. Exercise Solutions

EXERCISE 1.23-A In your own words, describe at least five general requirements for safe operation of hand and portable tools.

ANSWER 1.23-A There are a large number of possible correct answers to this exercise. The list below shows some, but not all, of those possible answers.

- Determine the work content and the sequence in which it should be accomplished.
- Identify the safety procedures that shall be followed.
- Ensure that the tools and instruments are in good working order and have up-to-date calibration as required.
- Identify which tools are required and ensure that all workers know how to use them.
- Identify protective equipment required to perform the job safely.
- Allow only qualified individuals to operate tools and equipment.
- Select and post safety signs, symbols, or accident prevention tags to warn and protect employees where hazards are likely to endanger lives.
- Use barricades in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas where they might be exposed to uninsulated energized conductors or circuit parts. Do not use metal barricades where they are likely to cause an electrical contact hazard.
- Use manual signaling and alerting to warn and protect employees when signs and barricades do not provide sufficient warning and protection from hazards.
- Limit the work area to authorized individuals who are familiar with the work. Do not allow unauthorized individuals into the work area.
- Ensure that all individuals who are involved in the work are notified of any changes in the work conditions.
- Report unsafe conditions that develop during the work process immediately to the person in charge or the immediate supervisor.

EH Resident Competency 1.23

EXERCISE 1.23-B State the purpose for each of the following types of protection associated with hand and portable power tools:

- Constant pressure switch
- Grounding
- Personal protective equipment
- Procedural/administrative controls
- Shutoff device

ANSWER 1.23-B

Hand and Power Tool Protection Devices	
Control	Purpose
Constant pressure switch	To protect personnel by shutting off the power to the tool when the pressure is released
Grounding	To protect personnel from the hazard of electrical shock or electrocution
Personal protective equipment	To protect personnel from the hazards such as falling, flying, abrasive, and splashing objects or exposure to harmful dusts, fumes, mists vapors, or gases
Procedural/administrative controls	To protect personnel from hazards associated with improper use of hand and portable tools by establishing rules and requirements that limit exposure to those hazards
Shutoff device	To prevent or minimize the damage to personnel by shutting off the power or other source of energy to the tool